



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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TARDEC Systems Engineering Group June 14, 2012

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Report Documentation Page

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What is Project Recon?







- A software suite of tools currently under development that will enable projects/programs to capture, manage, and link risks, issues, and opportunities in a centralized database.
 - Spin-off of Risk Recon, the Army owned and developed Risk Management tool
 - Current Risk Recon functionality
 - Issues Recon & Opportunity Recon Launching Fall 2012
 - FMEA and Lessons Learned Planned Future Capabilities



Why use Project Recon?



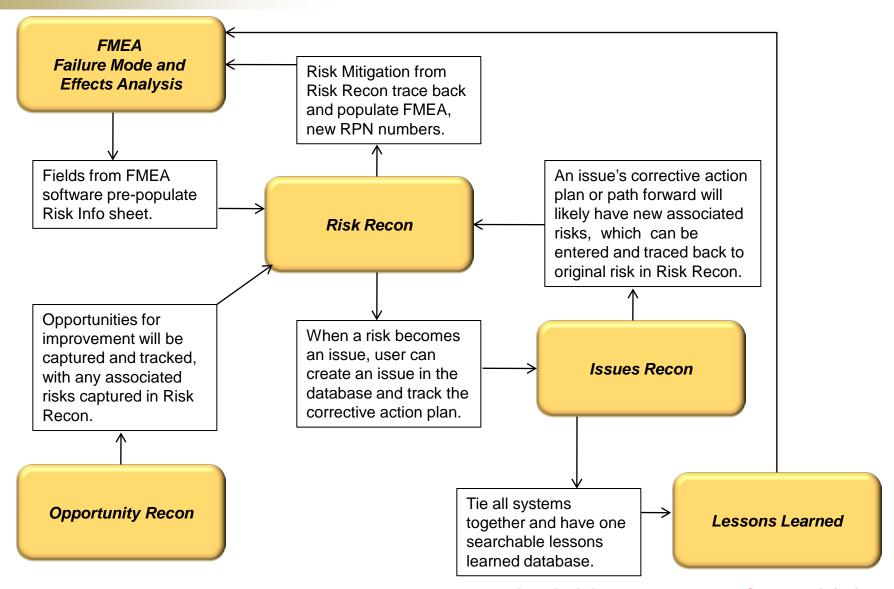
- The benefits of using Project Recon on a project/program include:
 - No cost It's free for DoD
 - Linking together of risks and issues
 - Promotes collaboration and communication
 - Traceability & historical record
 - Uniform capture of data
 - Integrated workflow
 - Customizable reporting
 - Secure DoD database
 - Server based application / web accessible
 - Unlimited data storage
 - Lessons learned





Integrated Risk Management





TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.







Risks (Risk Recon)



What is a Risk?



 A risk is a measure of future uncertainties that has a negative impact on program performance goals and objectives within defined costs, schedule, and performance constraints. Risk addresses the potential variation in the planned approach and suspected outcome.





Even on a beautiful day, though the likelihood is low, there is still the risk of loss of power from a thunderstorm.

Lightning has the *potential* to hit your house or a power tower during a storm.

If the lightning strike hits your house or a power tower then power to the house may be lost, and the consequence could be that your alarm clock may not go off, making you late for work.



Why Do Risk Management?



"There is only one reason for risk management:

To assure the program decision-makers learn about and deal with important risks before they turn into issues."

- Carnegie Mellon University "Risk Management Overview for TACOM"
- The benefits of risk management include:
 - Preventing problems before they occur a proactive approach
 - Understanding your risks and putting measures in place to prevent issues doing it right the first time
 - Minimizing or preventing cost overruns, schedule delays, and performance problems
 - Improvement of product and design quality
 - Maximizing usage of resources
 - Promoting teamwork and systems engineering
 - Communicating to stakeholders and decision makers



Risk Recon Fields

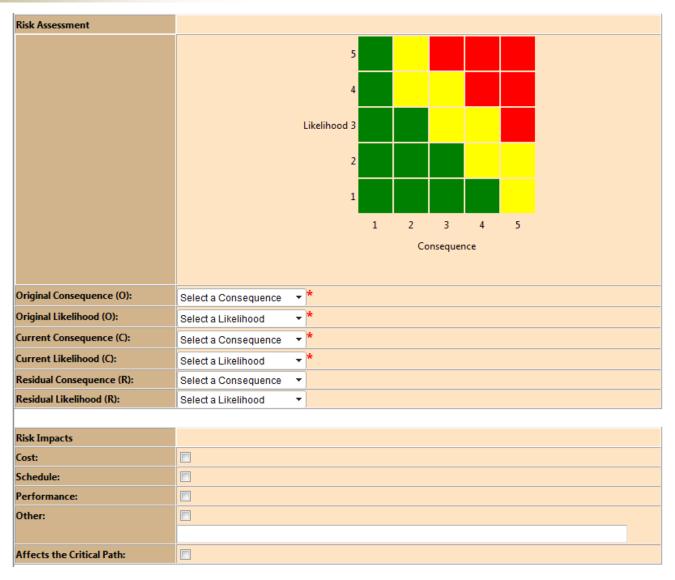


Back to the Home Page Save Cancel			
Risk Info Sheet Documents	Risk Info Team Mitigation Plan(s) Related Projects Risk Lifecycle		
0			
Changes must be Saved first be	efore navigating off this web page		
Risk Analysis (Click bar to expand/co			
Risk ID:			
User Defined Risk ID:			
Risk Title:	*		
Status	Candidate ▼		
Urgent:			
Check to alert Risk Manager of time sensitive			
risk.			
Open Date:	5/15/2012 *		
Last Saved On Date:			
WBS #:			
IMP/IMS #:			
Functional Groups:	Functional Groups ▼		
Risk Lead:	Gillis, Paula ▼ *		
	* required field		



Risk Recon Fields







Risk Recon Fields



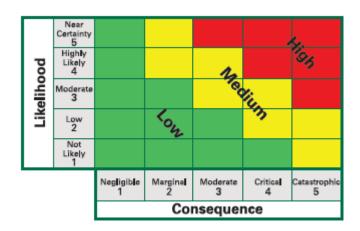
Description of Risk Condition:	
Clear and concise - cite only one Risk	
condition.	
Context:	
What, how, why, where of the risk condition.	
Consequence if realized:	
In terms of cost, schedule, performance and	
other.	
Mitigation Plan Summary (Plan	
overview and desired end state;	
residual risk.):	
You may enter your basic mitigation plan	
details here or you can click on the Mitigation Plan(s) tab to enter a more detailed plan.	
Plants) tab to enter a more detailed plant.	
Cl	
Close out rationale:	
New problem/issue with ID number, overtaken	
by events, Mitigation plan successful Who approved this closure? Date of risk closure?	
Reason for risk closure?	
Neason for lisk closure:	
	j ^t



Additional Risk Recon Capabilities



- Search/Copy
- Document Attachments
- Risk Info Team
- Related Projects
- Future Linkage to Issues and Opportunities
- Reporting





Example Risk Recon Report Risk Information Sheet



Risk Information Sheet (FOUO)

Risk Title: Loss of Power in Thunderstorms

User Defined ID:

Status: Baselined

Unique ID #: 659

Opened Date: 02/08/2010 Last Saved Date: 02/08/2010

Risk Lead: Graf, Lisa

Risk Information Team Members

Risk Information Sheet (FOUO)

Current Mitigation Plan(s) for this Risk:	Applied to Risk	Plan Name	Status
	X	Bury Power Lines	In Development

Mitigation Plans include:

choosing NOTE - the person writing this risk bought a generator to temproarily reduce the risk of power Mitigation Plan(s): loss. This reduces the current risk, but is only a temporary interim mitigation steps.

r/> Final Mitigation Plan:

https://www.enach.com/

- 1. Surveying the power outage database for areas that experience high power loss,
 />> 2. Conducting a root cause analysis for the highest risk area as to what the reason is for the power outages. (NOTE - root cause determined to be wind damage in a high wind corridor).

- 3. Determine what the new requirements are for system performance (how many outages a year, for how many hours and due to what root cause is acceptable) (NOTE - it was determined that only routine maintenance downtime was deemed acceptable for less than 3 hours).
or />
- 4. Path forward was determined to be to bury the power lines.

 y>
- 5. Need to conduct grid survey to determine if easement land is available to bury the lines. (NOTE -

sufficient land space is available and open for development).

-> equirments for burying power lines.

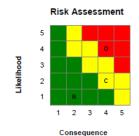
ns of equipment, manpower and funding needed.
 management for approval.

power lines.
 years to determine how effective the plan has gone.

br />

still exists since the main lines have to go from the power tower to the ground,

residual risk, but the power company guranteed that the main line could be 3 hours after failure, thus reducing the consequence impact of loss of power.



the majority of the information for the risk including the description of the risk, context, consequences and mitigation.

The "Risk Information Sheet" contains

 It can be exported into an Acrobat .pdf file, Excel, CSV, etc.

gation Steps for the applied Plan

Risk Impacts:	X Cost Schedule X Performance Other:		
	If there is a thunderstorm with high winds and lightning strikes occur, then loss of make occur and people may be without power.	power to homes	
Context:	If a thunderstorm occurs and high winds in excess of 60 mph occur (WHAT), then come down due to high winds (HOW) and loss of power may occur (WHAT). If lig (WHAT), then transformers may be hit and damaged (HOW) and loss of power me (WHAT). This may occur because power lines are exposed to the environment (Wind damage and lightning strikes. This can affect home and people (WHO) subdany building in the area that the power system supplies power to (WHERE).	htning strikes occur ay occur VHY) and subject	
	If power is lost in a storm then homes will not have power. This can lead to loss o refrigerator (COST), alarm clocks that don't work and people may be late to their ju and worrying about failed systems such as sump pump systems (PERFORMANCI performance issues at work to those affected.	obs (SCHEDULE)	
2/11/2010 9:01:12 AM	Page 1 of 2	rptRiskInfoSheet	

				New Con.	New Lik.	
Step	Mitigation	Due Date	Status	Level	Level	Step Owner
1	Purchase a home generator	03/01/2010	Complete	4 - Critical	2 - Low Likelihood	Barb Dmoch
10	Monitor area for 5 years to determine how effective the plan has gone.	04/29/2015	Not Started	2 - Marginal	1 - Not Likely	Donna Brady
2	Conduct power outage survey.	03/04/2010	Complete	4 - Critical	3 - Moderate	Lisa Graf
3	Conduct power outage root cause analysis	03/08/2010	Complete	4 - Critical	3 - Moderate	Shawn Haase
4	Determine new reqmt for max. downtime allowed.	03/10/2010	Complete	4 - Critical	3 - Moderate	Cheryl Rassette
5	Conduct land availability survey	03/12/2010	Complete	4 - Critical	3 - Moderate	Matt Sheehy
6	Determine requirements for burying power lines.	03/15/2010	In Progress	4 - Critical	3 - Moderate	Mike Olsem
7	Formulate and present plan to management for approval.	03/17/2010	In Progress	4 - Critical	3 - Moderate	Mike Baker
8	Bury the power lines, complete job.	03/31/2010	Not Started	2 - Marginal	1 - Not Likely	Mark Mazzara
9	Demonstrate that time to repair of main line is <3 hours.	04/01/2010	Not Started	2 - Marginal	1 - Not Likely	Brian Graham

2/11/2010 9:01:12 AM Page 2 of 2 rptRiskInfoSheet







Opportunities(Opportunity Recon)



What is an Opportunity?



An opportunity or "positive risk" is an area within a program or project
where potential improvements can be made with additional allocations or
resources to change the outcome of an event or situation to a better than
expected result. In other words, rather than remaining at the status quo,
efforts can be made to advance the program or project to a better place
than initially anticipated.

Keeping with the example of a power outage due to thunderstorms and high winds, an *opportunity for improvement* could include:

 Having the electrical company bury power lines underground to reduce the risk of downed power lines

<u>Residual risks</u> associated with the potential opportunity include:

- Damage to the power lines due to small animals
- Damage to the power lines when digging

Why Do Opportunity Management?



The benefits of opportunity management include:

- Reduced Cost
- Shortened Schedule
- Improved Performance
- Leveraging R&D
- Integration of Lean Six Sigma and Value Engineering
- Elimination of Unnecessary Activities
- Improved Processes or Value of Output
- Implementation of a New Approach
- Identification of New Products





Opportunity Recon Capabilities



- Rather than working to mitigate Avoid, Control, or Transfer a risk, in Opportunity Management, you strive to promote - Exploit, Enhance, or Share - an opportunity.
- The ranking would transform from a measurement of the Consequence and Likelihood (where a lower likelihood is desired) to a measure of the Gain and Likelihood (where a higher likelihood is desired).
- Opportunity Recon will allow for ranking and prioritization of improvement efforts.
- Most Opportunities will be either Value Engineering or Lean Six Sigma efforts, so execution of Opportunity projects will be tracked through PowerSteering.
- Opportunity Recon will link with Risk Recon to capture any residual risks associated with the improvement efforts.







Issues (Issue Recon)



What is an Issue?



 An issue is an event or consequence that has 100% likelihood of occurring or has already occurred due to the realization of a risk. The event or consequence has a negative impact on achieving program performance goals and objectives within established baselines of cost, schedule, and performance constraints.

The goal of risk management is to mitigate risks to prevent them from becoming issues.

In the event <u>mitigations are unsuccessful</u>, an issue occurs and corrective actions must be kicked off.

In event of a power outage, *corrective actions* could include:

- Installing a back-up generator in your home's electrical system
- Add lightning rods to the top of your house to ground the lightning strike

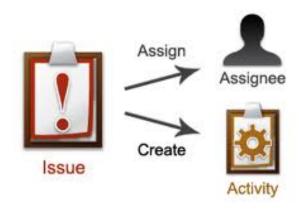




Why Do Issue Management?



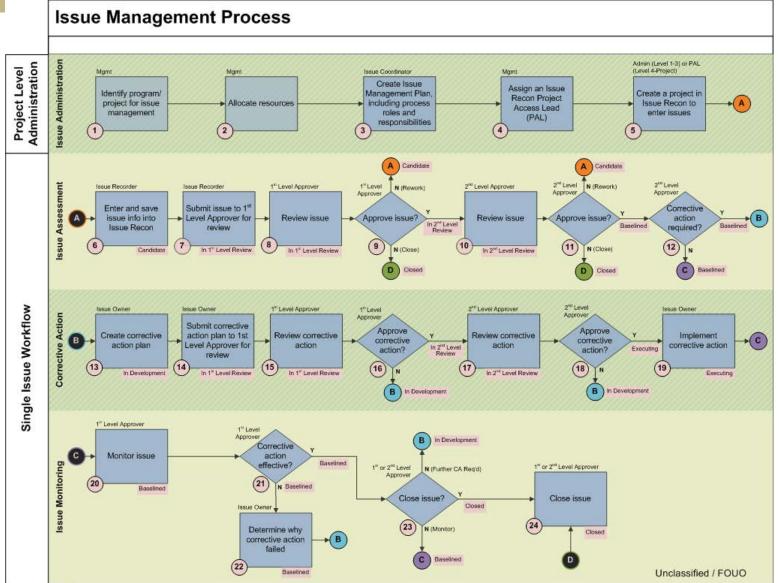
- The benefits of issue management include:
 - Understanding your issues and putting measures in place to correct them
 - Tracking progress toward resolution
 - Short Term Containment
 - Long Term Corrective Action
 - Issue accountability
 - Allocating resources efficiently
 - Communicating to stakeholders and decision makers





Notional Issue Management Process

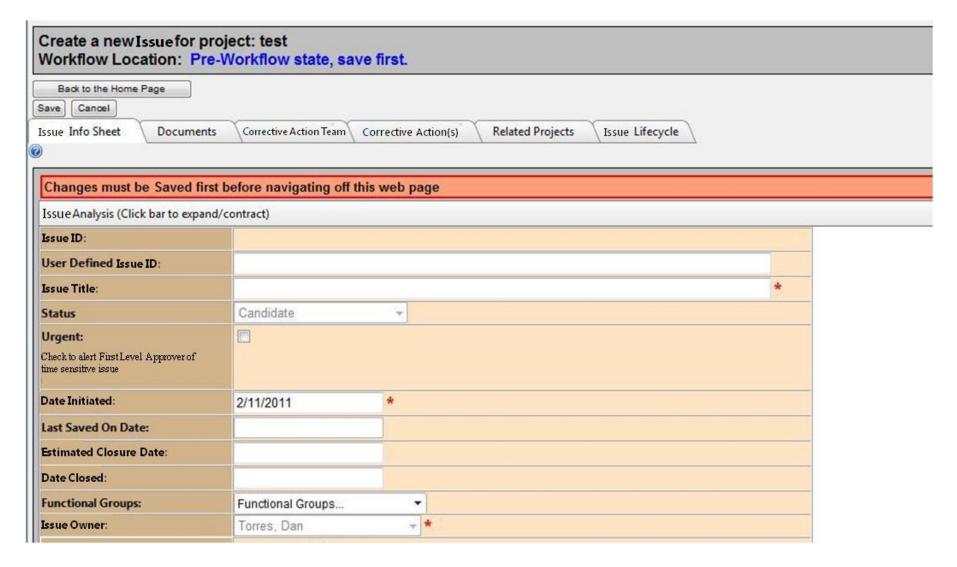






Proposed Issues Recon Fields







Proposed Issues Recon Fields



Issue Impacts *	
Cost:	
Schedule:	
Performance:	

When an Issue Impact (Cost/Schedule/Performance) is selected, nested check boxes will appear to allow for further granularity.

Issue Impacts *		
Cost:	V	Labor/Overtime 🗹 WD Required 📝 Training 📝 Capital 📝
		Sustainment 🗹 Contract Revision 🗹 MIPR Required 🗹 RFI Required 🗹
		Operations 🗹 Validation 🗹 Spares 🗹 TD/EMD 💟
		Logistics Other: V
		Affects the Critical Path: FRP Decision 🗸 Contracting 🗸
Schedule:		Acceptance Testing 📝 Analysis 📝 Procurement 📝
		Development (TD/EMD) ☑ Deployment ☑ Redlined ☑
		Product Quality Verification 📝 Characterization 💟 Logistics 🗹
		Other: 🔽
		KPP/KSA 🗹 Comms 📝 Maintainability 📝 Transportability 📝 Mobility 📝
		DOTLPF 📝 Consumption 📝 Force Protection 📝 Op Effectiveness 📝 Lethality 📝
Performance:		Suitability 🗸 Power 📝 Survivability 📝 Network/C4I 📝 Reliability 📝
		Other: 🗹 Logistics 🗹



Proposed Issues Recon Fields



Problem Statement: *				
Cite only one Issue, including circumstances and current symptoms/effects.				
What, how, why, where of the Issue.				
ECP Required: Enter ECP # if required				
	Risk Recon/FMEA 🗹	TIR 🗹	Contractor 📝	Retrofit 💟
Issue Source: Discriminators	Environmental 🔽	ManPrint 📝	Production 📝	Personnel 💟
	Hazard Log/Safety 📝	Other 📝	Depot 📝	Training 📝
Root Cause: A root cause is a portion of a system's structure that 'best' helps to explain why the system's behavior produces a problem's symptoms. Difficult problems usually have multiple root causes. These are found by asking a succession of 'Why is this happening?' Naisen-like questions until the root causes are found.				
Corrective Action Plan: You may enter your basic plan details here for both containment and solution or you can click on the Corrective Action(s) tab to enter a more detailed plan.				
Close out Rationale: Containment, Solution Implementation, Assume Issue, authority for closure, OBE, associated ECPs and/or TDP updates, close out date, etc.				



Notional Issue Rating Guidance Pre Milestone C



Issue Rating Table – Pre Milestone C				
Rating/Description	Performance	Cost	Schedule	
High Jeopardizes an exit criterion of current acquisition phase.	Unacceptable; No viable alternatives exist	, , , ,	Key events or milestones delayed by more than one month	
Medium-High Fails to meet threshold for Key Performance Parameter.	Unacceptable; Significant changes required;	Program budget impacted by 5% - 10% or more; Significant portion of program management reserves must be used to implement workarounds	Critical path activities two weeks late or more; Workarounds would not meet milestones; Program success in doubt	
Medium Shorts a critical mission need but no breach of KPP threshold requirements.	Below goal; Moderate changes required; Alternatives would provide acceptable system performance; Limited impact on program success	Budget impacted by 1%-5%; Limited impact on program success; Does not require significant use of program cost and/or schedule reserves	Non-critical path activities one month late or more; Workarounds would avoid impact on critical path; Limited impact on program success	
Medium-Low Requires the commitment of a minor portion of the program cost, schedule or performance reserve.	Below goal but within acceptable limits; No changes required; Acceptable alternatives exist; Minor impact on program success	Budget impacted by 1% or less; Minor impact on program success; Minor commitment of program management reserves (schedule, cost) used for workarounds	Non-critical path activities late less than one month; Workarounds would avoid impact on key and non-key milestones; Minor impact on program success; Development schedule goals exceeded by 1% - 5%	
Low Remedy will require minor cost, schedule and/or performance trades.	Requires minor performance trades within the threshold – objective range; No impact on program success	Budget not dependent on the issue; No impact on program success; Cost increase can be managed within program plan	Schedule not dependent on issue; No impact on program success; Schedule adjustments managed within program plan	



Notional Issue Rating Guidance Post Milestone C



Issue Rating Table – Post Milestone C				
Rating/Description	Deployment	Operations	Sustainment	
High Program and/or mission success jeopardized. Unable to replicate failure. Root cause(s) not understood.	Unable to comply with acquisition/fielding strategy or plan; Cost growth requires modification of acquisition strategy; Causes reprogramming of funds	Prohibits mission success; Causes platform/fleet redline; Greatly affects vehicle mobility / recovery / survivability / lethality; Greatly reduces force protection; Blocks transmit / receive of Command, Control, Communications, Computers, & Intelligence (C4I); Low availability greatly impacts tactical planning; Fails Key Performance Parameter (KPP);	Spares on back order & none in stock; Significant delay in procurement of long lead items; Delay in procurement of critical items; Maintenance costs exceed budget by 10%; Causes excessive unplanned depot level maintenance	
Medium-High Requires significant commitment of program cost, schedule or performance reserve. Failure can only be replicated sporadically. Root cause(s) not yet confirmed.	Significant delay to acquisition/fielding strategy or plan; Cost growth has minor affect on acquisition strategy; May cause reprogramming of funds	Major impact on mission success; Causes individual vehicle redline; Significantly affects vehicle mobility / recovery / survivability / lethality; Significantly reduces force protection; Inhibits transmit / receive of Command, Control, Communications, Computers, & Intelligence (C4I); Lower availability impacts tactical planning	Spares on back order; Delay in procurement of long lead items; Critical items delivery delayed; Maintenance costs exceed budget by 5% - 10%; Causes excessive unplanned intermediate level maintenance	
Medium Requires moderate commitment of program cost, schedule or performance reserve. Failure can be replicated. Potential root causes narrowed down to a few candidates	Delay to acquisition/fielding strategy or plan; Cost growth requires review of acquisition strategy; Not expected to cause reprogramming of funds	Hinders mission success; Vehicle subsystem operates in a degraded mode; Moderately affects vehicle mobility / recovery / survivability / lethality; Moderately reduces force protection; Causes latency in rate of transmit / receive of Command, Control, Communications, Computers, & Intelligence (C4I); Reduced availability may impact tactical planning; May cause significant modification of Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) to resolve	Needed spares are in transit; Short delay in procurement of long lead items; Delayed items not critical; Maintenance costs exceed budget by 1%-5%; Causes excessive platform or individual vehicle unscheduled maintenance at depot level	
Medium-Low Requires the commitment of a minor portion of the program cost, schedule or performance reserve. Failure can be replicated repeatedly. Root cause identified. Corrective Action options identified.	Minor delay to acquisition/fielding strategy or plan; Minor cost growth contained within procurement budget	Mission success not compromised but mission effectiveness not optimized; Slightly affects vehicle mobility / recovery / survivability / lethality; Slightly reduces force protection; Reduced reliability of transmit / receive of Command, Control, Communications, Computers, & Intelligence (C4I); Some mission planning may be affected; May cause modification of Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) to resolve	Spares stock short of inventory target; Minor delay in receipt of non-critical items; Maintenance costs exceed budget by 1% or less; Causes slight increase in platform or individual vehicle unscheduled maintenance at depot level	
Low Remedy will require minor cost, schedule and/or performance trades. Failure can be replicated repeatedly. Root cause identified. Corrective Action selected and verified by trial, prototype, or simulation	Resolution may permit acceptance of issue with virtually no affect to acquisition/fielding strategy or plan	Minor operational issue that affects small proportion of users; May cause small modification of Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) to resolve	Spares have been received and accepted and are being installed	



Proposed Issues Recon Fields Corrective Actions



This is an optional tab with more fields to define complex corrective actions vs. a simple issue resolution. This tab does not have to be used. Later increments could include links to root cause methods. The pull-down help menu will have reference documentation available for root cause determination.

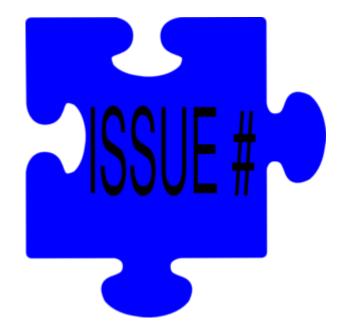
	/		
Home Administration Reports Actions New Users Help	Version: 5.9 - February 2011 User: Dan Torres		
	Project: HBCT Test Org > HBCT Test PMO > HBCT Training > HBCT Training > test		
Classified data must not be stored in this risk management tool			
Edit Issue:Drop down icon is not working Workflow Location: Archived			
Back to the Home Page View History Save Cancel Revive			
	Related Projects Issue Lifecycle		
Select a method to enter corrective action plan(s):			
Short-Term Containment	This screen will allow the user to check the type		
✓ Long-Term Corrective Action			
E 2019 Ferm contente Action	of corrective action plan they want to enter.		
	Numerous corrective actions plans can be		
	entered for each method.		



Additional Issues Recon Capabilities



- Search/Copy
- Document Attachments
- Corrective Action Team
- Related Projects
- Future Linkage to Risks & Opportunities
- Reporting





Example Issues Recon Report Detailed Issue Report



Issue Recon - Detailed Issue Report (FOUO)

HBCT Test Org / HBCT Test PMO / HBCT Training / HBCT Training / test three

Issue ID	Status	Ratin	Impac	Issue Title	Problem Statement	Issue Impacts	Issue Source	Root Cause	Corrective Action Plan
587	Baselined	5	C/S/P	Loss of power in a	Due to a thunderstorm, high	Power Sources were	Mother Nature	High winds knocked down	Containment: use
				thunderstorm	winds occurred and power	knocked out: refrigerator		several power lines in the	generator to keep food
					was lost to household	went out	1	area	from spoiling.
		l	1	I	systems.	I		I	Long Term: repair power
		<u> </u>	+ -				+	+	lines and restore power
52	Baselined	4	C/S/P	SIL delay	LRUs were delivered late	SIL will not be stood up in a	BMO did not process funding	LRUs were not ordered	Containment: Expedite
		1	1	l	which is delaying SIL	_I timely manner	in a timely manner delaying	Itimely	funding to process order.
		ı	I	I	I	I	order processing	I	Long Term: Establish
			1		I	I	I	I.	process for funding
		l	I	I		I		I	requests and approval to
		- -	+	'		+	+	+	prevent future delays
18	Baselined	3		l		User errors causing periodic	Lack of training	Movement up of roll-out date	•
			I.	lcausing significant user	in new operating system.	system crashes		did not allow enough time	with new users to prevent
		l	1	errors	I	I	I	Ifor adequate user trials and	errors
		ı	ı		I	I	I	training.	Long term: Roll out revised
		1	ı	I	I	I	I	I	training to ensure users
		ı	ı		I	I	I	I	are comfortable with new
			'— -		!	'	'	'	system I

- The "Detailed Issue Report" contains all primary Issue fields separated into a summary by Project.
- It can be exported into an Acrobat .pdf file, Excel, CSV, etc.



Summary



- By linking risk, opportunity, and issue processes and database tools, potential and actual failure modes and opportunities will be more effectively addressed and managed from identification through lessons learned.
- Collaboration throughout organizations within the Department of the Army will be facilitated by implementing a common architecture and approach for handling failure modes and opportunities.



- Some benefits of using Project Recon include:
 - Understanding your risks, opportunities and issues to put the proper measures in place for mitigation or corrective action
 - Minimizing cost, decreasing schedule and improving performance
 - Maximizing resources
 - Communicating to stakeholders and decision makers